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VOLUME TWO

FEBRUARY, 1893.

Geo F Newton, des

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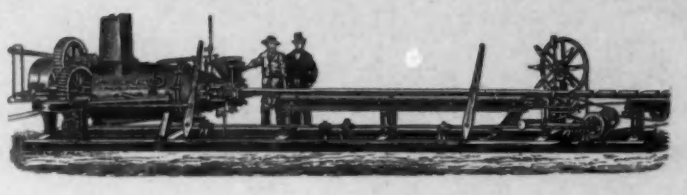

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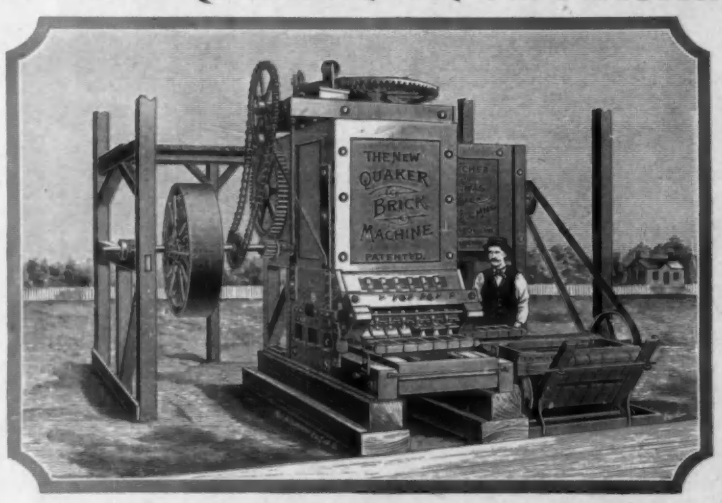

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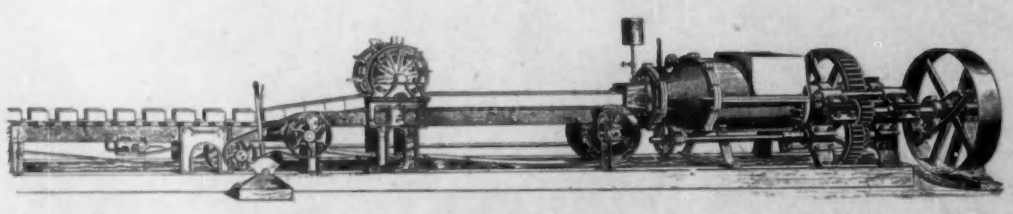

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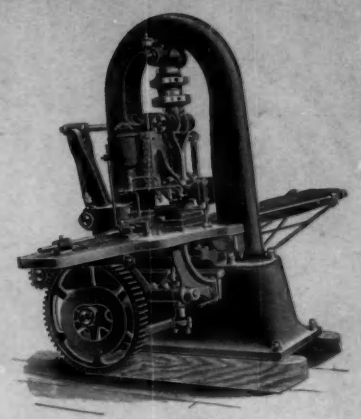

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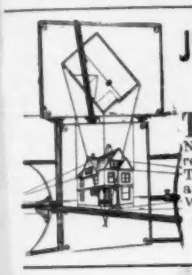

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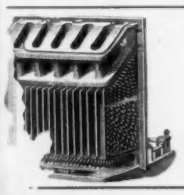

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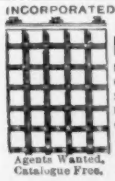

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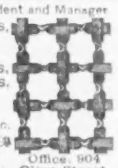

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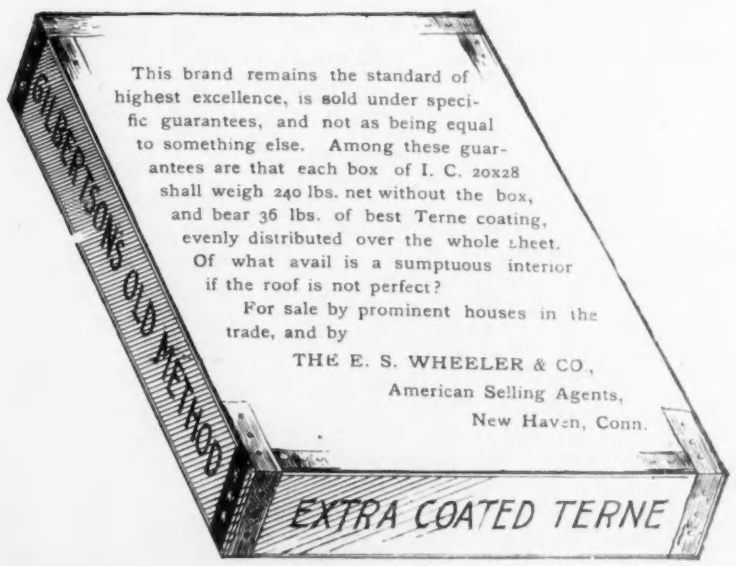

THE BRICKBUILDER

VOL. II. BOSTON, FEBRUARY, 1893. NO. 2.

ARCHITECTURAL TERRA-COTTA.

Continued from January Number.

THE PROCESS OF ITS MANUFACTURE.

Enough may have been said about the material, and I pass on to speak of the manufacture. But before we enter upon the manufacturing proper, there are some preliminaries which claim our attention. The first of these is the setting out of the work in order to ascertain the number, size, and shape of the blocks required, so as to be able to give correct information for the making of the moulds out of which the blocks are cast, and the number of blocks to be cast out of them. This work requires to be very accurately done, so that there may be no waste of material, and that every block may fit its intended place. In any important building this is no mean task; it requires a practical knowledge of drawing and construction, a full acquaintance with the nature and capabilities of the material, a considerable amount of mechanical skill, and an insight and perception sufficiently keen to take in the ideas and requirements of the architect, to see the way through from beginning to end, and, if necessary, to point out any practical difficulties there may be in the way, and to suggest a remedy.

WHITE TERRA-COTTA CAPITAL IN GRACE CHAPEL, FLATBUSH, L. I. TAYLOR AND INGLE, ARCHITECTS, NEW YORK. MADE BY STEPHENS, ARMSTRONG AND CONKLING, PHILADELPHIA.

Having ascertained what is required, the next step is to prepare the moulds. These are made of plaster, and are taken from a plaster model made to the exact form of the blocks required, only increased to allow exactly for the shrinking of the clay. For this, unless it is done in the first instance, the architect's drawing has to be carefully enlarged, a reverse profile has then to be made in strong sheet zinc or other suitable material, and with this a plaster moulding is run, which is cut up jointed, and squared to the required size and shape. Any particular models requiring notches, sinkings, returns, enrichments, etc., have to be treated in a special manner. Great care is requisite in the preparation of these models, as upon the accuracy of them depends in a great measure the correct fitting together of the blocks, and the trueness of the work when placed in the building. The least twist or imperfection in these will repeat itself in the mould, in the block, and eventually in the building, proving a vexation and a perpetual eyesore.

The model having been perfectly prepared, a piece mould is then taken from it, in such manner as to allow of its being easily withdrawn without injury to the model. These moulds are so interlocked as to be readily put together, and form a substantial receptacle for the pressing of the clay. In making the moulds, also, some considerable skill and practical knowledge and experience are required, and more especially for the work that is enriched or under cut — any slovenliness or bungling in this is sure to prove fatal to the work.

It must be confessed that in the performance of these preliminaries, the terra-cotta manufacturers in the past have been sadly deficient. They have had a work thrust on them for which they were not prepared, and the importance of which they did not fully realize. The making of a few moulds for chimney-pots, vases, and such like things, that required no exact dimensions and no particular nicety of fitting, had been about the full extent of their experience; and they thought by such workmen as were then in their employ, they should succeed in this new and more important branch. In this they have been mistaken, and to this they are now fully alive. They now see the necessity of having men of superior ability, specially and technically trained for the work, and we may confidently expect that the terra-cotta of the future will be more appropriate to the purpose, and more exact in form than the generality of it has been in the past.

I come now to what I have called the manufacturing proper. In speaking of this, I think we cannot do better than begin with the raw material, and follow it through all the stages of its manufacture. Let us first take up the surface, or naturally plastic, clays. The preparation of these, in order to secure satisfactory results, is even more

elaborate than for the hard consolidated ones. It is so, because of the grit and other impurities they contain, which must be thoroughly eradicated before they are in any way fit for the purpose designed. To accomplish this, the clay has first to be thoroughly incorporated with

RED TERRA-COTTA CARTOUCHE

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water, and by a process of blunging, brought into a state of liquidity, for which purpose several methods are devised. It is then passed through a very fine sieve, by which all the impurities, in the shape of stone, grit, etc., are extracted. From the sieve it passes into the drying pan, until it is full to the depth of four or five inches, and there remains until, by the action of the fire underneath, the water is sufficiently evaporated, when it is taken out and passed through the pug mill, which is a machine composed of blades, revolving in a cylinder. By this process the clay is brought into a high degree of plasticity, and when cooled down is ready for the hands of the presser.

With the hard marls and fire clays, the process of preparation in some respects differs from the preceding ones. These clays are the better for having been exposed to the influence of the atmosphere for some three or four weeks before being taken in hand. They are then, by means of powerful machinery, reduced to the condition of a very fine powder, for which several different kinds of machines have been invented. As the clay comes from the machine, it is sifted and incorporated with an adequate supply of water, in which state it is passed through the pug mill with the same result as before. The working up of these clays is improved by their being left in stacks covered up for some days before being used. If there is any mixture of clays from different strata, in order to secure equality of shrinkage, great exactness in the proportion of each should be preserved, or it will be found that the material made from one mixture will be smaller or larger than from another. In such case it will be impossible for terra-cotta, made from the two, to come together and make good work. Some manufacturers endeavor to modify the shrinkage of each of these clays by adding "grog," made of the same material, burnt and ground up. In that case the proportions must also be kept, and I am of opinion that such an admixture does not improve the ring and soundness of the material produced.

The clay having been prepared, it is taken in hand by the presser, who, in the first place, forms a block of it of a workable size near at hand upon his bench, from which, by means of a wire, he cuts slices of sufficient thickness and lays them down upon the battering slab; these are well battered down in order to drive out the air and compress them, from which he cuts suitable sizes for the work he has in hand. It is customary to well dust the mould to prevent the clay from adhering to it, then to cover all the several pieces of the mould with the clay and well press it upon them. As the pieces are taken up and put together, great care should be taken that none of the clay gets between the joinings of the mould, so as to throw it out of shape. When all the several pieces are adjusted, it is strongly braced to keep it in form, and then by the hand all the several joinings are well puddled and pressed together so that the adhesion may be complete. Afterward, if any webbing be required for the strengthening of the block, it is cut and placed in position. The pressing is then practically finished, and after remaining some time in order to stiffen, it is turned over upon a straight board, the mould is taken off, and the block left to dry. In this work of pressing no great skill is required, and the commonest laborer may soon be brought into the way of doing it. It only requires care and a determination to do it perfectly. If the clay is not well battered, or if not well

RED TERRA-COTTA CAP,

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pressed upon the mould, or if the joinings are not well made, it is sure to turn out faulty; but if these points are carefully attended to, a sound block will be the result.

Too great haste in drying is very injurious to the work and especially when first taken from the mould. It should

not be placed in way of draughts or exposed to any considerable degree of heat, as by this the outside is formed into a crust before the inside has time to attain the same degree of dryness: this prevents the proper shrinkage of the clay, and produces cracks, warping, and twisting. At first it is essential that the drying process should proceed slowly and gradually in order to produce good work.

When it has become sufficiently dry it is taken up by the finisher, who carefully takes off the seams, and, if it is at all drawn out of shape, he restores it, and then cleanly polishes the face. Far greater skill is required for the work than for the pressing, and only the best workmen should be employed at it; for, with whatever nicety or exactness the mould may have been prepared, it will be all neutralized unless the finisher does his work properly. The blocks will now be in such a state of solidity tha they may be placed in a better position for completing the process of drying.

There are some kinds of terra-cotta which require special treatment at the hands of the finisher, and particularly that made from the red plastic clays. There are few of these clays but what are impregnated with what is called a lime juice, created by the action of the rain-water with which it is saturated, and which always contains a small quantity of carbonic acid, corroding the particles of stone it contains. During the process of drying, as the water evaporates, this "juice" rises to the surface, forming a kind of scum, which, if not removed before burning, greatly disfigures the material. To wash it over with any coloring matter only adds to the disappointment, as this will soon peel off and disclose the white surface beneath.

VIEW OF AMES BUILDING, COR. LINCOLN AND ESSEX STS., BOSTON.
SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS.

Now we come to the process of burning. This is a very critical time in the production of terra-cotta, and at the onset let me say that it is important to have a competent and well experienced man for this work, as a little carelessness or unsound judgment here will soon frustrate all the preceding endeavors, and render them quite fruitless. He must understand the quality and nature of the material placed in his hands, and be able to perceive beforehand with exactness the effect which the heat he administers will have upon it. He must know the time to apply it, the quantity to give, the degree to attain, and almost the precise moment when to withdraw or discontinue it, attending the process with a watchfulness and anxiety which a due sense of his responsibility alone can inspire.

There are several kinds of kilns used for the burning of terra-cotta, each maker very probably adopting those he considers best suited to the nature of his material. We cannot suppose that they would allow any pecuniary considerations to stand in the way of their erecting those which in their judgment will do the work most perfectly. Some of the kilns are made square and some round; some with a down-draught and some with an up-draught. But the best for the purpose, in my opinion, whatever the material may be, is a cone muffled kiln, as by this the object desired, viz., a thoroughness and equality in the burning and a clearness and regularity in the color, is best attained; the heat becomes more equally distributed, while the clay is protected from the damaging effects of the sulphur and flame. The additional cost of erecting these kilns, and the extra amount of fuel required in the heating of them, are more than repaid by the superior substance and purity in colors of the material they produce.

The blocks being sufficiently dry, they are placed in the kiln. The clays differ as to this condition — some kinds requiring to be more perfectly dry than others. It is then for some days subjected to a very low heat, in order

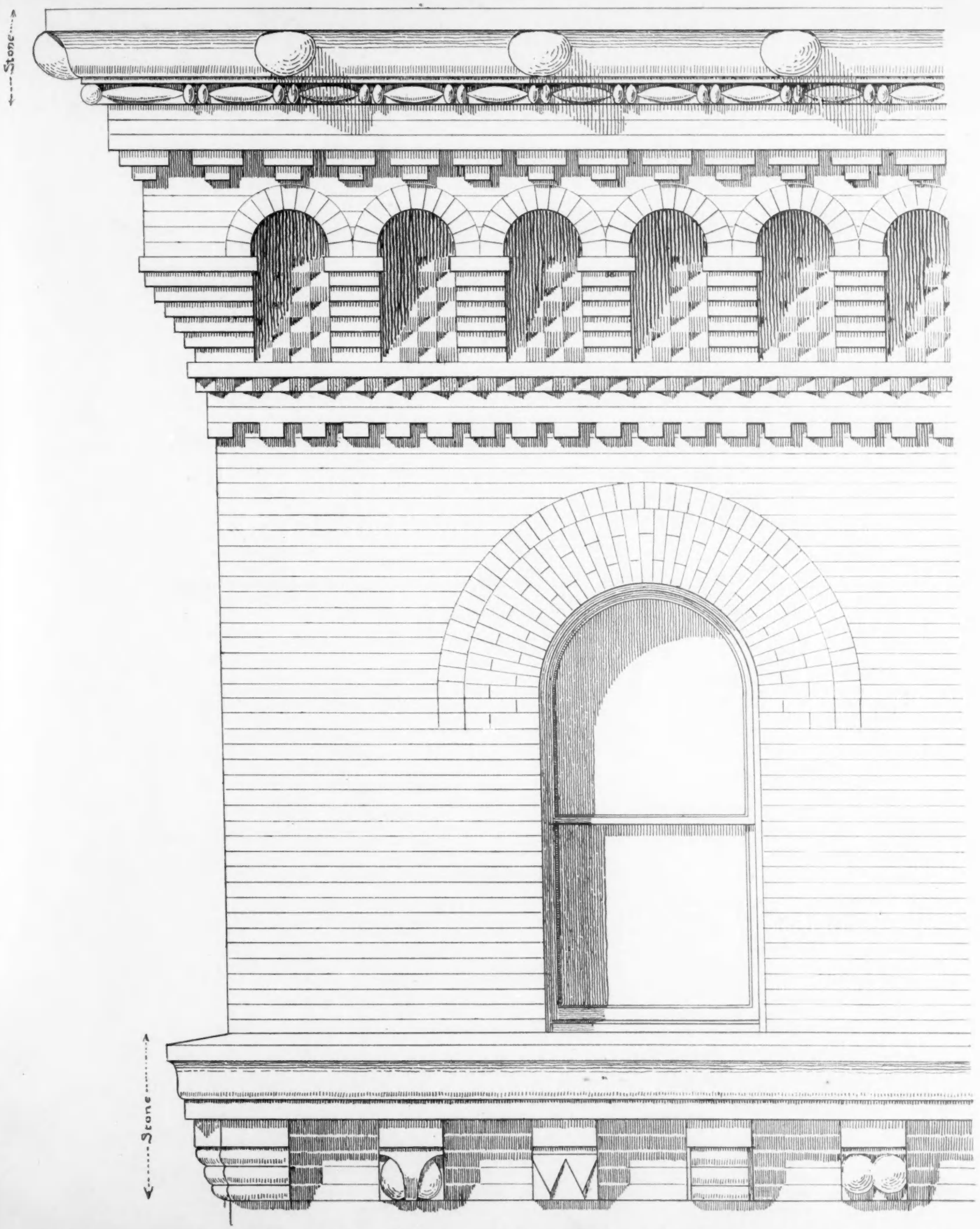
BUILDING ON LINCOLN, BEACH AND UTICA STS
BOSTON, MASS. WINSLOW & WETHERELL, ARCH'TS

FOR SCALE ELEVATION, SEE PLATE 14.

to drive out the remaining moisture, and to evaporate the salts; the heat is afterwards gradually increased until it is brought to the required height. There is also great difference with regard to this: some terra-cotta will only bear a good, red heat, whilst others require a white heat, enough to melt iron, or even steel. To aid the burner in deciding when the heat has been sufficiently applied, trial pieces put in for the purpose are continuously extracted, and when this climax is attained, the firing is discontinued and the kiln left to cool.

(To be continued.)

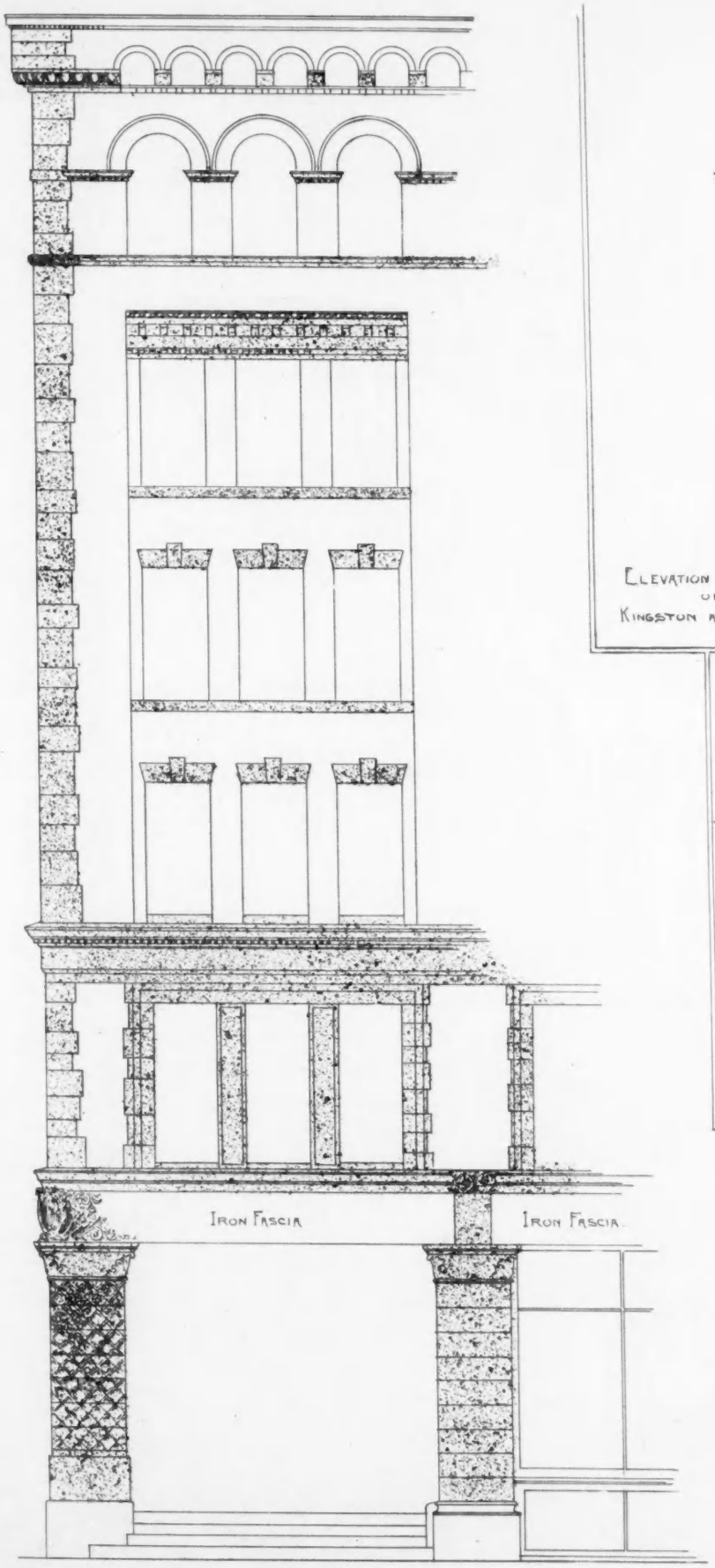
During hot weather it is of great importance in erecting buildings in stone or brick to thoroughly wet every stone or brick before it is laid. The water not only removes any dust that may have accumulated and would prevent the mortar adhering, but it causes a much better adherence between the bricks or stones and the mortar than would otherwise be the case, because of the tendency to suck up moisture in dry and hot weather. This may seem at first sight an item of little importance, but there is more in it than may appear. — *Canadian Architect.*



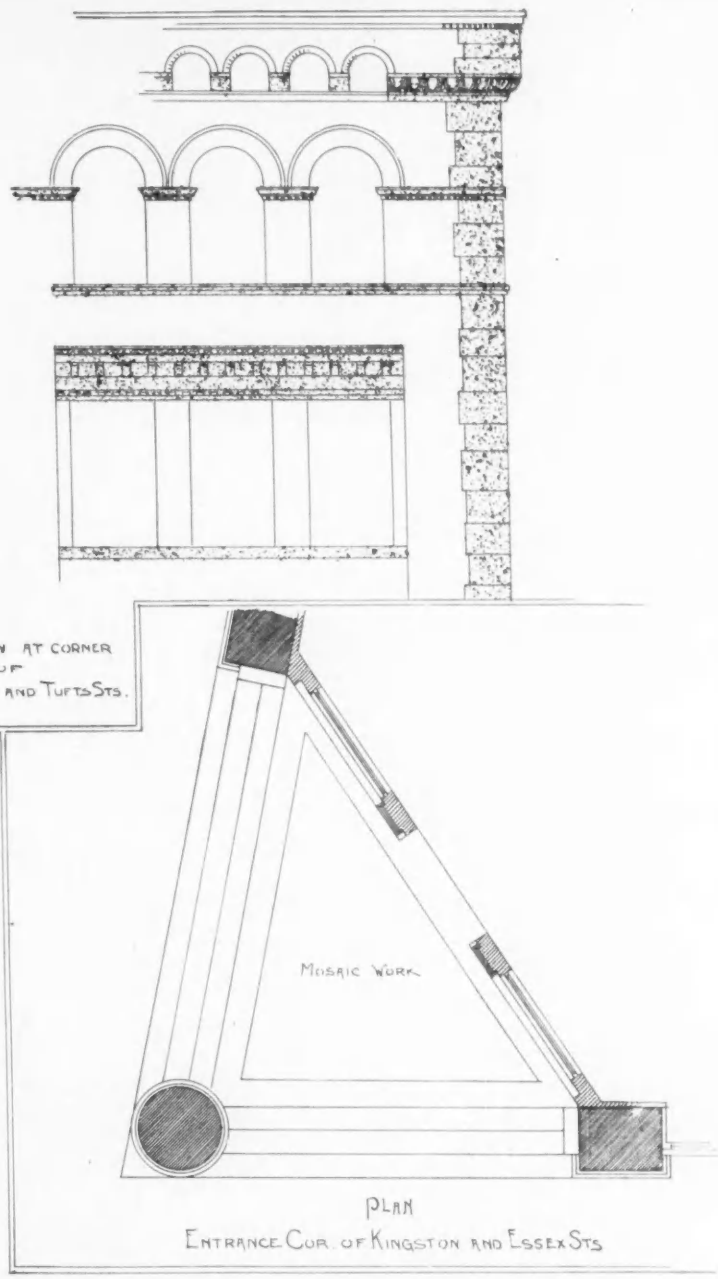
PORTION OF THREE QUARTER INCH SCALE DETAIL, EXACT SIZE. FORT HILL BUILDING, CORNER HIGH AND HARTFORD STREETS, BOSTON.
SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS, AMES BUILDING, BOSTON.

EIGHTH SCALE ELEVATION OF CENTRAL BAY OF THE AUCHMUTY BUILDING, BOSTON.

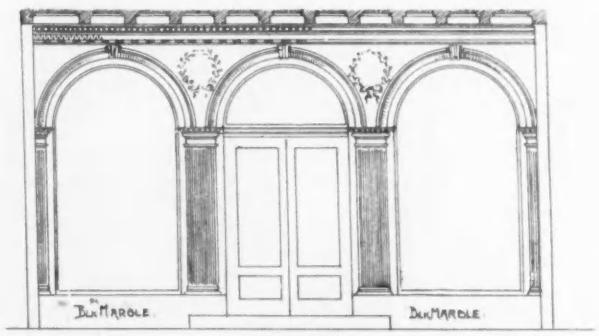
WINSLOW & WETHERELL, ARCHITECTS.



Elevation Cor. Kingston and Essex Sts



Plan
Entrance Cor. of Kingston and Essex Sts



Elevation

Scale of Feet

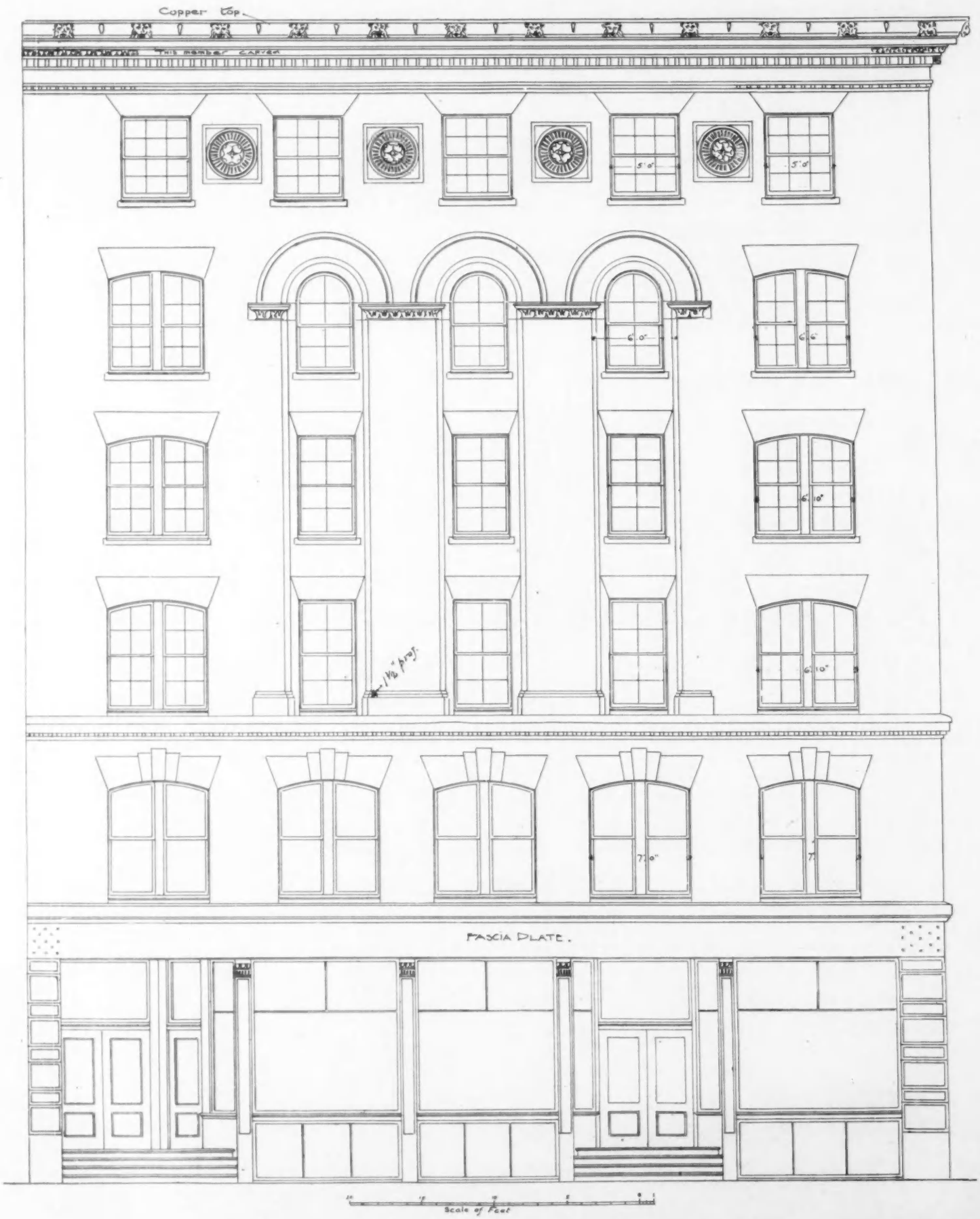
EIGHTH SCALE DRAWINGS OF PORTIONS OF THE AUCHMUTY BUILDING, BOSTON.

WINSLOW & WETHERELL, ARCHITECTS.

ELEVATION OF THE BUILDING AT NOS. 134 TO 144 LINCOLN STREET, BOSTON, MASS.

WINSLOW & WETHERELL, ARCHITECTS

THIS PLATE IS EXACTLY 1¼ INCH SCALE.



LINCOLN STREET ELEVATION, BUILDING CORNER LINCOLN AND BEACH STREETS, BOSTON.

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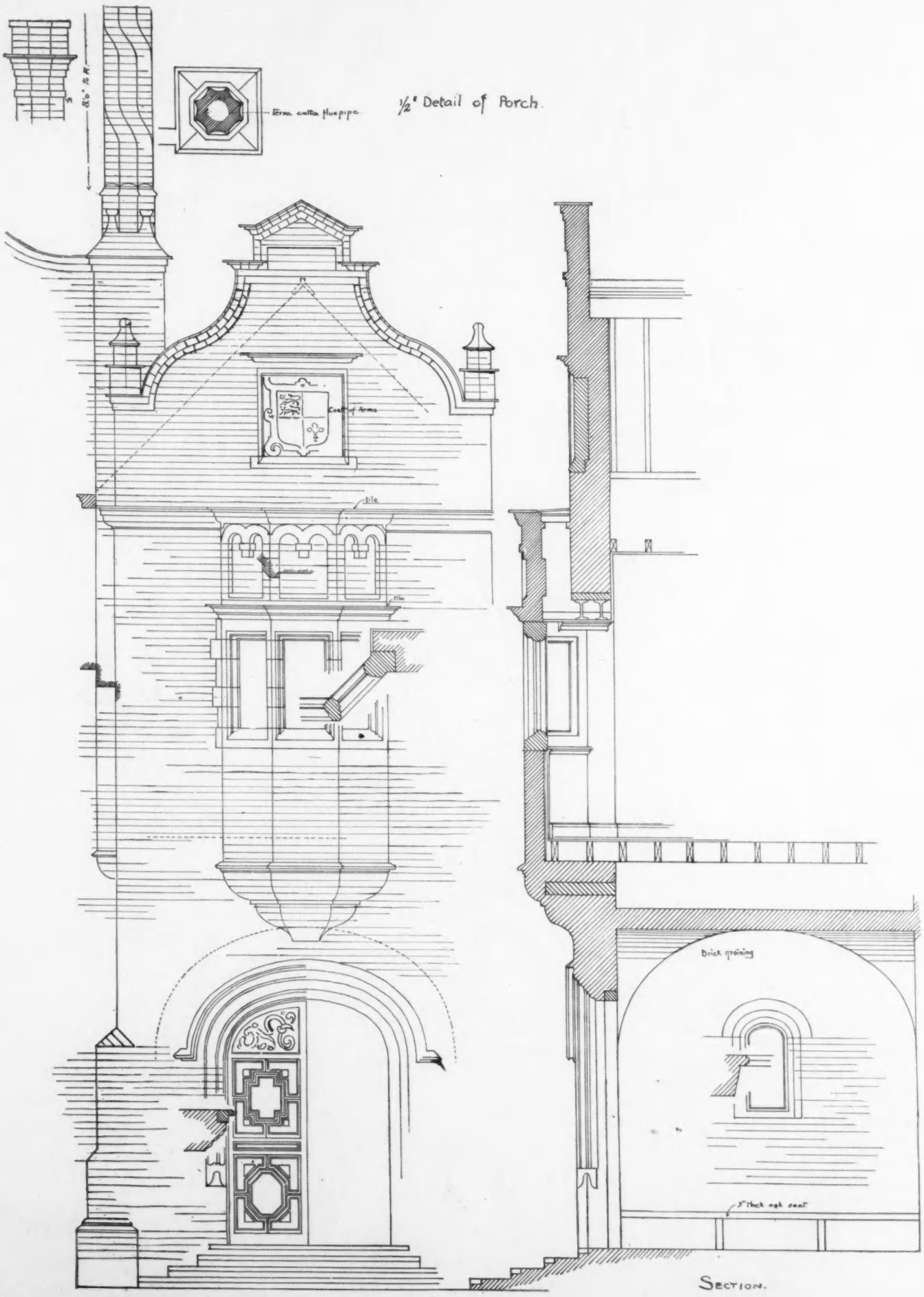
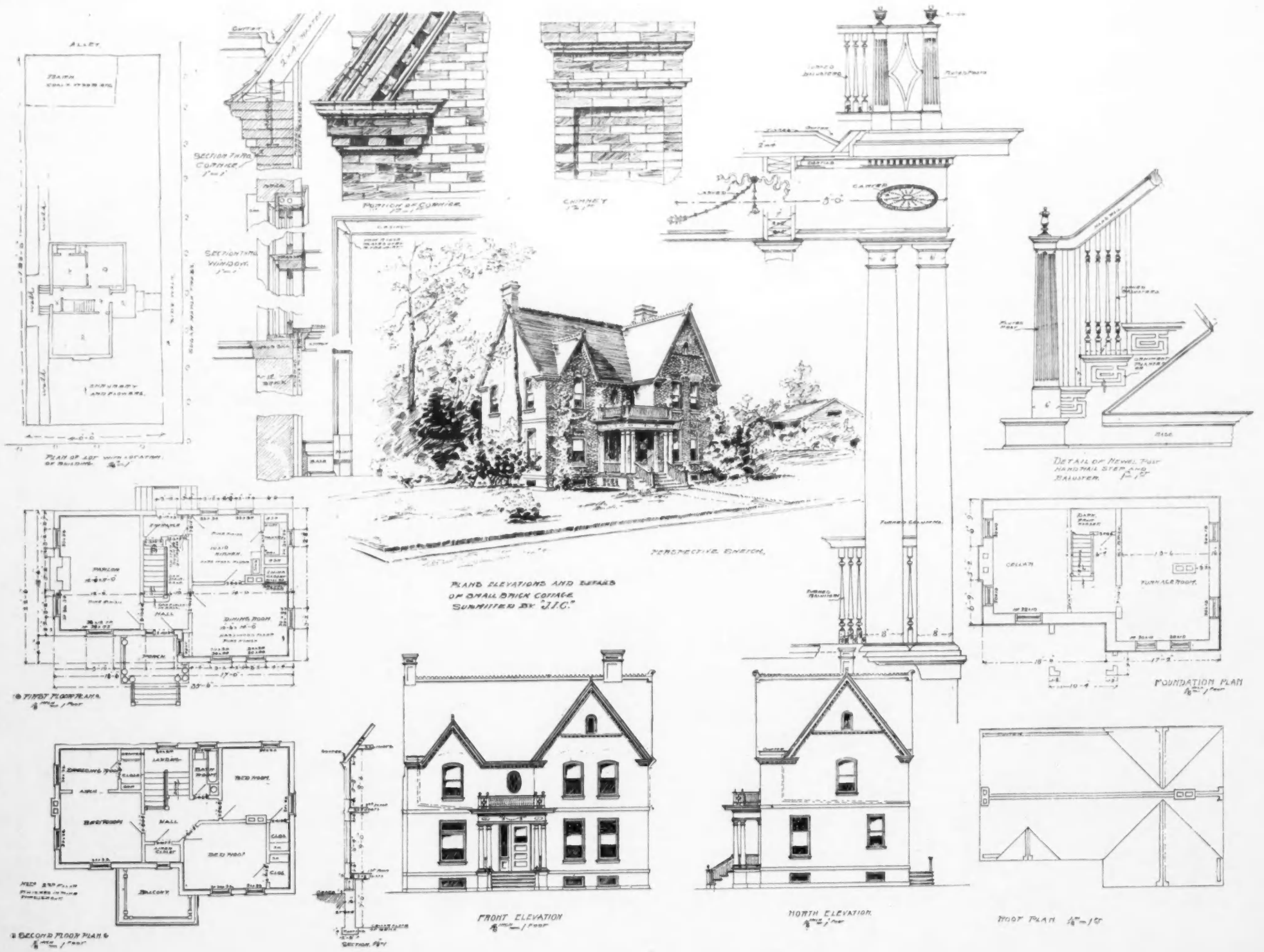


DETAIL OF BRICKWORK BY ERNEST GEORGE & PETO, ARCHITECTS, LONDON, ENGLAND.



BRICKBUILDER COMPETITION FOR A $2,000 BRICK HOUSE.

DESIGN BY L. H. PARK, RACINE, WIS.

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AN ILLUSTRATED MONTHLY DEVOTED TO THE ADVANCEMENT OF BRICK AND TERRA-COTTA ARCHITECTURE.

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WE were congratulating ourselves that we had at last made up lost time and the February number would be out on date, when fire totally destroyed the plant of our plate-makers, the Art Publishing Company at Gardner, Mass. We lost in that fire not only our plates for the February number, but also the originals and many others we had prepared for future issues. There was nothing to do but publish without illustrations, or delay the issue until new ones could be prepared. The latter course was adopted. It is a curious coincidence that the three buildings burned in the great fire of March 10 should form so large a portion of the newly prepared plate matter, and that the other two mercantile buildings were barely saved. The views we publish also show quite clearly the grouping of the burned buildings. The corner of the Ames Building (detail of which we published in No. 1, Vol. I.) is that on Lincoln and Essex Streets, where the fire broke out, and where the jumping from the windows occurred. Down Essex Street to the right, separated from the Ames Building by a narrow alley, is the small building of the Ludlow Mfg. Co. (p. 16), of which the Essex Street elevation with all details was also published in the initial number of this paper. The Ludlow Building joins the Auchmuty Building, commonly known as the Brown, Durell Building, and a view of the latter, looking down Kingston and Essex Streets, is also one of our illustrations (p. 17). The scale drawings of this building are the subjects of plates 10 and 11 of this number. All these buildings were destroyed, the Ames Building utterly. Portions of the walls of the other two remain, possibly in condition to be used in rebuilding. The two buildings on Lincoln Street, at the corner of Beach, were diagonally across from the Ames Building, and on the same side as the Lincoln Building which was wholly destroyed.

The forced delay in publication makes this number of particular interest as illustrating the most disastrous conflagration Boston has had, with the exception of the great fire of 1872.

Three and a half millions' worth of property has, it has been estimated, been destroyed, or a round million more than was consumed in the terrible fire which occurred in the same district on Thanksgiving Day, 1889.

It is no accident that the same region is visited again and again by such disastrous and almost irresistible conflagrations. It is due to the fact that this district is occupied by large wholesale stores, the construction of most of which is of a kind to invite just such disasters. The occupants of these stores and the real estate owners who supply their wants are themselves mainly to blame for the destructive character of the conflagrations that have occurred, because they insist upon the very conditions that make these fires so irresistible, viz., enormous, unobstructed floor areas and huge window openings. To this fact and the narrow streets the destruction of the other day is mainly due.

The structures in question consist merely of an enclosing wall surrounding the area to be occupied by the building, with but few cross walls. In the case of the Ames Building there is practically but one cross wall, leaving 14,000 feet of floor area unobstructed by anything but the most combustible partitions.

These enormous spaces are filled with a series of floors of so-called "slow-burning" construction supported on iron columns more or less protected by fireproof coverings, and the rooms are filled with merchandise of the most inflammable nature. Nothing could have burned more rapidly than the "slow-burning" construction in question; not that this method of construction is not a good thing properly used; but with floor areas so enormous, a fire of such great heat is so rapidly produced that the heavy timbers are little better than so much kindling. The area surrounded by brick walls with huge openings at the bottom, and filled with nothing but combustibles is, in reality, a gigantic scientifically constructed furnace with its draft openings at the base. The Ames Building, in which the fire originated, is divided, indeed, by partitions, but these partitions were of Georgia pine sheathing, without plaster, with glass in the upper part and over the transoms of the doors to light the corridors. Walls, floors, and ceilings, everything inside the enclosing brick walls was of wood, and the floors occupied by wooden counters loaded with merchandise. Once a fire well started in such conditions nothing could save the building or the similar buildings contiguous to it.

Through the large window openings rushed the flames carrying the conflagration across the narrow streets, and, what with the strong wind that was blowing at the time, the wonder is not that so much destruction was wrought, but that the fire was arrested where it was. Had the Ames Building been subdivided, as it should have been, by a series of heavy brick fire walls into areas not exceeding five thousand square feet, it is probable that the fire could have been confined to the compartment in which it broke out, or at any rate have been prevented from spreading much beyond that.

In the case of the Auchmuty Building the unobstructed area is 21,000 feet; here the construction is of ordinary floor joists covered with patent plastering on wire lathing, with magneso-calcite between the floorings; this construction seems to have stood the test better than the "slow burning" construction of the Ames Building, for it would appear that had the roof of the Auchmuty Building been as fire resisting as the floors it might have been saved. The fire attacked it from the roof, and when that fell sufficient fuel was provided to set fire to and destroy a great part of the floors also.

The Lincoln Building was of ordinary floor joists and lath and plaster, and though completely destroyed, its frequent fire walls were of great assistance in stopping the fire.

It is no accident that fires in Boston are so much more destructive than they are in Manchester (England), London, or Paris, notwithstanding our better organized and equipped fire departments. The London Metropolitan Building act restricts areas without brick fire walls to five thousand square feet, and the window areas of the warehouses in London or Manchester are much smaller than in any of our recent commercial buildings.

It is to be hoped that the so obvious lesson of this fire will not go unheeded. The new building law of Boston, which went into effect less than a year ago, restricts the floor areas to ten thousand feet. But, as we pointed out at the time, this restriction is not enough, and it is to be hoped that the disastrous fire that has just occurred may lead to the half-way compromise measure of that law being amended in the direction of further restriction. Indeed, Mayor Matthews has already petitioned the legislature that the floor areas allowed in second-class buildings be reduced to six thousand square feet. Nothing should be allowed to prevent this reduction of area being embodied in the law. Still it is a comfort to know that when the buildings in the burned district are rebuilt the areas without brick walls will be very much smaller than they were in the buildings just destroyed. Roof hydrants and other such devices are but palliatives. What is needed is more frequent brick walls running up through the roofs, so that the buildings shall be something better than mere huge enclosures filled with combustibles.

Of the buildings destroyed three were among the most beautiful commercial buildings of the country, and it is the more to be regretted that their construction should not have been more substantial. We refer to the Ames Building on Lincoln Street, by Shepley, Rutan & Coolidge, the Auchmuty Building (occupied by Brown, Durell & Co.) on Kingston Street, by Winslow & Wetherell, and the little Ludlow Building on Tufts Street, by Peabody & Stearns, which owed its destruction to being wedged in between its larger neighbors.

That whole district of Boston was (and still is indeed) somewhat remarkable for the number of really beautiful commercial buildings which it contained. We publish views of all three of these buildings. Of the Ames and Ludlow Buildings details also will be found in our issue of January, 1892, and of the Auchmuty Building in this issue. All three buildings are remarkable for their appropriate treatment of brickwork, as are the Shoe and Leather Exchange on Bedford Street by Hartwell & Richardson; a building just finished on the corner of Lincoln and Beach Streets, by Winslow & Wetherell, illustrated by perspective and elevation in this number, and several others by different architects on Lincoln Street. As we have said, the whole district is a somewhat remarkable one architecturally, and it is a pity that the methods of construction adopted should not have been such as to promise more permanency. It was in the same district that stood the beautiful Ames Building, designed by the late H. H. Richardson, which was

destroyed from similar causes in the Thanksgiving Day fire of 1889. Its site is now occupied by a less successful yellow brick and white marble building, by Shepley, Rutan & Coolidge.

In commenting upon plates of details of the Boston Chamber of Commerce published in *The Architectural Review* for January, that paper says editorially:—

"The details of the Boston Chamber of Commerce are convincing in one respect — that is, that the building would have been better in brick than it is in rock-faced granite. There is a very foolish predilection among building committees for granite buildings, and, as granite is an expensive material to cut, rock-faced granite is advocated. The result is destruction of scale and clumsiness of effect, and unnecessary heaviness of walls.

"Granite is usually chosen according to the desires of the committees, because there has been for years the idea prevalent that it is the best expression of durability. As a matter of fact granite is a very perishable material as compared with brick and terra-cotta, either under the action of frost or fire."

It is coming to be more and more recognized in works of engineering, as it is already recognized in building, that unprotected iron is not a permanent material. Iron bridges are being more and more regarded as the merely temporary structures they really are. This will necessarily bring about the more frequent use of brick in these constructions. The Pennsylvania Railroad, probably the most progressive and the best managed road in the country, has come to the conclusion that the life of an iron bridge is even shorter than of a wooden one. Wooden bridges cannot, however, be used in railroading on account of the danger from fire, and are at best but temporary makeshifts though preferable to iron on all accounts except for fire risk. The Pennsylvania road is substituting masonry bridges for iron ones. If well built they will last indefinitely; they do not need painting; they do not need inspecting, and so are vastly cheaper as well as better in the long run. In England brick bridges are all but universal in railroading, and in the large cities most of the railroads enter on tracks elevated on massive brick viaducts, the space below the arches being used for warehouses for merchandise, as is the case with the arches of the viaduct leading to the Brooklyn Suspension Bridge in New York. In some parts of England a very hard dark gray brick of large size is used in the construction of railroad bridges, and is both handsome in appearance and very durable. As to the comparative value of brick and stone in engineering work, brick has the advantage in every respect if thoroughly well made and of the best quality for strength and hardness, and if the mortar used is of the best. In brickwork the mortar is even of more importance than with stone on account of the greater number of joints and the larger proportion of mortar which therefore necessarily enters into the work. But the quality of the brick and the mortar assured, brick is in every way preferable, both on account of ease of handling, cheapness of construction, and durability. There will, of course, be cases where stone for one reason or another is to be preferred, but such cases are exceptional. As a rule, the brick and the stone are better separate than when used together, both constructionally and artistically. The ugly combination of red brick and gray granite, of which some engineers seem so fond, is especially to be avoided.

Of recent terra-cotta work, that of the Hartford Savings Bank, Peabody & Stearns, architects, is remarkable for its richness and exquisite modelling. Through the courtesy of the Perth-Amboy Terra-Cotta Co. we have obtained large photographs of all the details and a liberal selection will be made for illustration in an early issue.

COMPETITIONS.

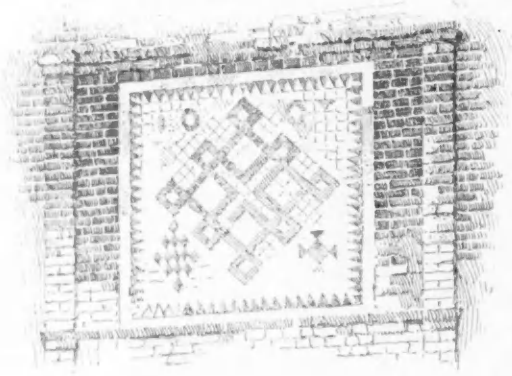
RULES: All drawings must be sent in marked with some motto or device and accompanied by a sealed envelope marked with the same, containing the full address of the competitor. The designs are judged by a committee of well-known architects, solely upon their merits, the names of the designers remaining unknown until the award is made, when the sealed envelopes corresponding to the devices on the designs are opened. To protect the interests of our advertising patrons it is stipulated that no ornamental bricks not found in their catalogues shall be used. This is really no restriction, for practically all of the leading manufacturers will be found represented in THE BRICKBUILDER. To encourage the study of effective use of the commoner materials, of two designs equally good, preference will be given that showing a skilful use of ordinary bricks to secure ornamental effect.

COMPETITION NO. 9.

JUDGMENT.

The programme in brief is a call for drawings of brick detail. Quality of rendering to determine the choice of best five. Taste shown in the selections of subjects also to be considered.

Forty-six drawings have been submitted. Of these the first five are published in this number. Subsequently a number of the others will be published, and at the time of publication detailed criticism will be made. The best



Panel above arch — La Vallaine — Normandy.

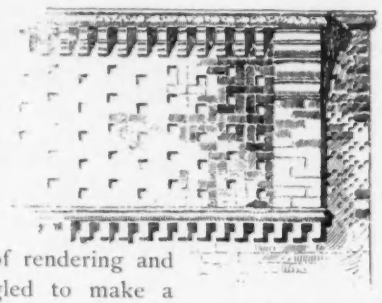
DRAWN BY CLAUDE FAYETTE BRAGDON.

five drawings of the whole number submitted are, in my judgment, the following:

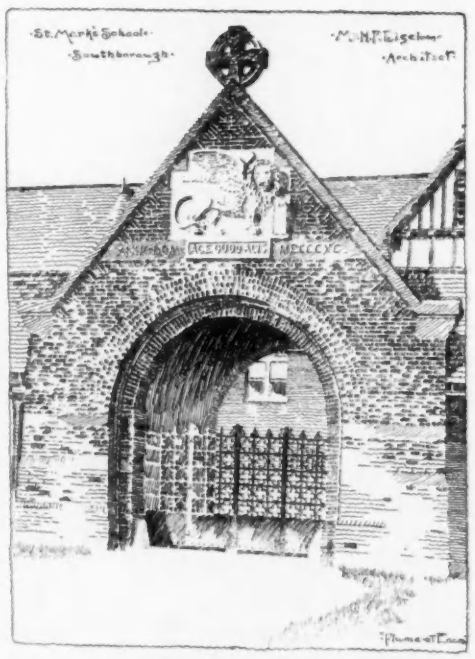
A BRICK PANEL. Drawn by Mr. Claude Fayette Bragdon, Rochester, and signed with a "Maltese Cross." For those whose style of drawing is stiff and mechanical, a study and copying of this would be helpfully corrective. A great variety of line, a little permissible cross lining to deepen the color in the right place, a deliciously free technique throughout, not every brick shown, and no two bricks rendered in just the same manner.

DRAWING FOR A BRICK CORNICE by Charles D. McGinnis, of Boston. *Nom de plume* "Hub." A bright catchy sketch, black, half-tone and white knowingly used. The sunny edge of projections have no outline. A well-selected brick subject successfully rendered.

ENRICHMENT AT THE TOP OF A WALL. Drawn by Mr. Walter G. Peter, Washington, D. C. *Nom de plume* "Capitol." Beautiful differences in color, just enough of rendering and of white intermingled to make a very pleasing color scheme. The line also like the two preceding subjects of excellent character and variety.



A BRICK GATEWAY. Drawn by Mr. C. Howard Lloyd, Boston. *Nom de plume* "Plume et Encre." Brick work shown in excellent manner, in varying color, some not rendered. Color of drawing as a whole successful. Except for too great use of wavy line, the technique is very pleasing.



DRAWN BY C. HOWARD LLOYD, BOSTON.

A BRICK DOORWAY. See illustration on page 19. Drawn by Mr. E. W. Donn, Washington, D. C. *Nom de plume* "Washington." Though considerable else than brick is to be seen, yet so large a proportion is brick, the subject is a suitable one. The drawing is exceptionally bright and sparkling. A strong dark, and lights introduced among the half-tones, lines omitted frequently, have produced a lively, brilliant rendering.

D. A. GREGG.

The passage of a new building law at Indianapolis, increasing the thickness of brick walls, has increased the consumption of brick to from 20% to 40%, and greatly improved the quality of construction there.

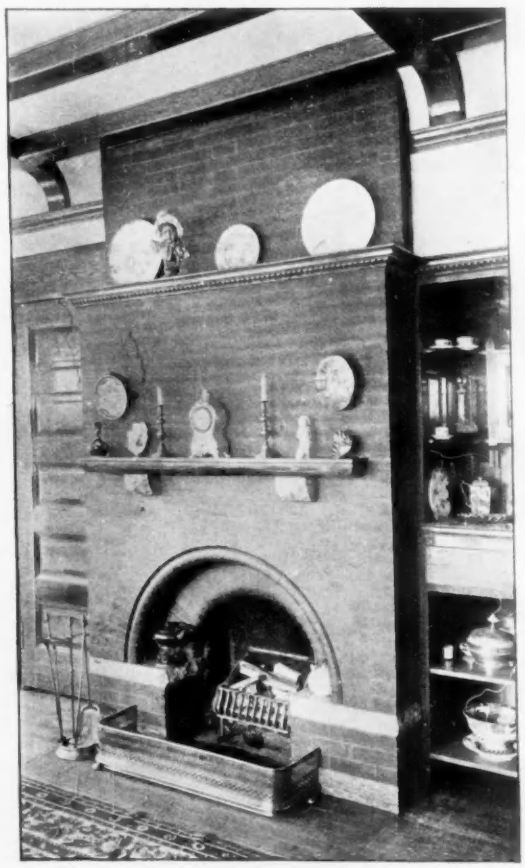
BOOKS AND PAPERS.

DRAWN BY E. W. DONN, JR.

The January *Clay-Worker* contains considerable of interest to architects and builders. It opens as usual with some architectural subject, this time, the brick pavilion at the Paris Exposition coming up for consideration. While the writer of the accompanying description has a good grasp on architectural ideas, we think he gives undue praise to the French. As a matter of fact there is little modern brickwork in France or Germany that is not utterly stupid. Far better things are done every day in this country, and if the brick exhibits at the Columbian Exposition are intrusted to any of a score or more American architects whom we could name, better results would in all cases be obtainable.

An article signed by E. C. W. on bricks bearing cuneiform inscriptions, we will reprint, by permission of *The Clay-Worker*, in a future number. "Dry Press Hints," "Practical Points about Brick Paving," and "Chemistry for Clay-workers" have more interest for the manufacturers than for the users of brick. A Fire Engine House at Louisville is illustrated by a half-tone, which we wish had been made rectangular, so as to cut off the upper part of the tower, which, to our notion, is a failure. J. W. Crary, Sr., contributes a paper which is commented on elsewhere in this number. A full-page half-tone is given to a very interesting photograph of the works of the Central Pressed Brick Co., of Cleveland, and this photograph, contrasted with the mental photograph of some brick works of "practical" men we have seen, explains why some makers, taking advantage of improved equipment, working in a *factory* and not a *yard*, turn out perfect bricks in large quantities with inappreciable loss from accident or delay. Indeed, this same number, in a humorous article on Ebenezer Jonathan with illustrations perhaps a little exaggerated, but, in the main, true, offers instructive comparisons.

The Jarden Brick Co., of Philadelphia, which has for some years been turning out a large quantity of first quality pressed and ornamental bricks, according to *The Clay-Worker*, has torn away from the "traditions" of its forefathers, and is putting in a whole new dry press plant, the basis of which will be six large Boyd presses. A description of the plant is published.



DINING-ROOM MANTEL.

RESIDENCE OF E. C. POPE. S. R. BADGLEY, ARCHITECT, CLEVELAND, OHIO. EXECUTED BY THE CENTRAL PRESS BRICK CO., CLEVELAND.

The *Architectural Era* for December publishes a half-tone of the residence of E. C. Pope, Esq., at Cleveland, designed by Mr. S. R. Badgley, of that city. Mr. Badgley has used, with very good effect, on the broad roof surfaces, a tile made by the Rapp Roofing Tile Company, of New Philadelphia, Ohio. This is one more addition to the unfortunately few tile roofs in the United States.